

# BEST AVAILABLE COPY

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-152339

(43)Date of publication of application : 05.06.2001

(51)Int.Cl. C23C 16/40  
C23C 16/34  
C23C 16/44  
H01L 21/316  
H01L 21/318

(21)Application number : 2000-307849

(71)Applicant : SAMSUNG ELECTRONICS CO LTD

(22)Date of filing : 06.10.2000

(72)Inventor : KIN EIKAN  
PARK YOUNG-WOOK  
LIM JAE-SOON  
CHOI SUNG-JE  
LEE SANG-IN

(30)Priority

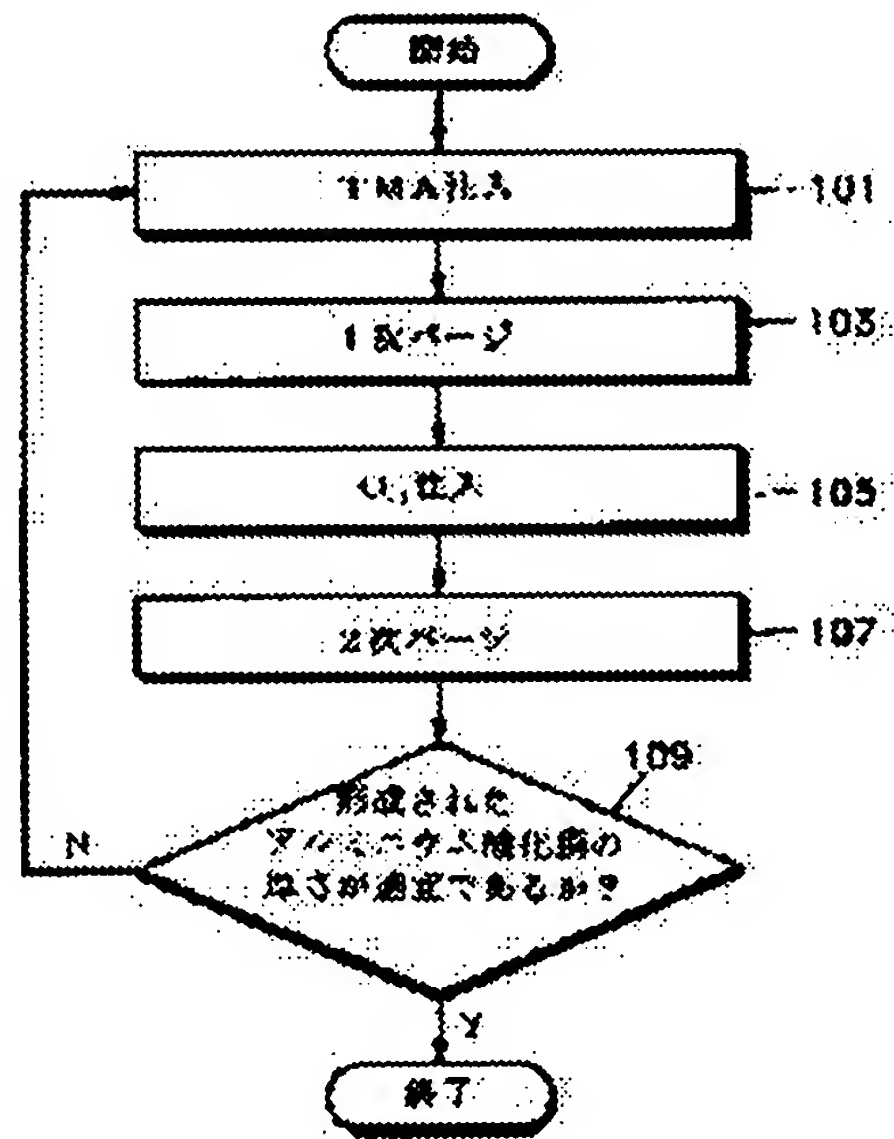
Priority number : 1999 9943056	Priority date : 06.10.1999	Priority country : KR
1999 9950902	16.11.1999	KR
2000 200014824	23.03.2000	KR
2000 200053415	08.09.2000	KR

(54) THIN FILM DEPOSITION METHOD USING AN ATOMIC LAYER VAPOR DEPOSITION METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a thin film deposition method using an atomic layer vapor deposition method.

SOLUTION: A first reactant containing an element to deposit a thin film and a ligand is poured into a reaction chamber containing a substrate and is purged, and next, a second reactant is poured and purged. Using a substance having bond energy with the element to deposit a thin film higher than that of the ligand, by the chemical reaction between the element to form into a thin film and the secondary reactant, a thin film is deposited, and moreover, the production of side-reactants is prevented. Alternatively, as the second reactant, a substance which does not contain a hydroxyl group is used, and after the purge of the second reactant, the same is again brought into reaction with a third reactant containing a hydroxyl group, by which the production of by-products of the hydroxyl group in the thin film is prevented. Alternatively, after the purge of the second reactant, for removing impurities and improving stoichiometry, the third reactant is poured and purged. In this way, the thin film which does not contain impurities and is also excellent in stoichiometry can be obtained.



### LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the  
examiner's decision of rejection or application  
conversion registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of  
rejection]